

**REMARKS**

Claims 1-3 and 5-10 are all the claims pending in the application.

Claim 1 is amended herewith. Support for the present amendments to claim 1 can be found in the present specification at lines 4-7 and 11-13 of page 5 and lines 6-9 and 12-16 of page 6.

**Claim Rejections - 35 USC § 103**

Claims 1-3 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (APA\_ (Specification of 10/691575) in view of Ariga et al (U.S. Patent 5486816).

Independent claim 1 recites, *inter alia*, a case;

a printed circuit board disposed within the case, and arranged substantially along the case surface;

a light emitting surface directed to a direction of a surface of the printed circuit board;

a light mixing space formed in a vicinity of an end of the printed circuit board, and located comparatively far from the light emitting surface; and

a window section formed within a portion of a surface of the case, arranged substantially along the surface of the printed circuit board, and located in the vicinity of the light mixing space.

In the rejection, the Examiner applies the AAPA as the primary reference. The AAPA is relied on as disclosing most of the features recited in claim 1. However, the Examiner concedes that the AAPA fails to disclose that the light emitting surface emits light substantially in a direction along said printed circuit board. (*Office Action*, p. 5). In fact, the AAPA teaches of using an LED having a surface facing a direction perpendicular to the printed circuit board. (*See* specification, p. 2, lines 1-5 and lines 16-20; *see also* arrow D in FIG. 1B and FIG. 2). Thus, the AAPA teaches of using an LED positioned on a printed circuit board at a location on the printed circuit board directly below a creamy white lens 3 or transparent window 22. In both embodiments of the AAPA, the light rays are directed substantially perpendicular to the surface of the printed circuit board.

To compensate for this deficiency, the Examiner relies on Ariga. Specifically, the Examiner contends Ariga teaches it is well known in the art that an LED can be a side/surface emitting type (col. 6:17-21). Thus, the Examiner concludes “[i]t is obvious that the light emitted from an LED can be substantially directed in a desired direction (i.e. along a printed circuit board) with the use of LEDs.” (*Office Action*, p. 4). As a rationale to combined, the Examiner contends “[i]t would have been obvious to modify AAPA with Ariga at the time of the invention, such that the light emitting surface emits light in a direction along said printed circuit board, to provide a method where light may be mixed with a light mixing space of the portable terminal device so that the user sees one mixed color as opposed to a plurality of colors in the window section.”

The AAPA discloses the communication terminal having a case, a printed circuit board, a light emitting surface, a light mixing space, and a window section. However, the arrangement of those components in the AAPA is quite different from the arrangement of claim 1. Specifically, because the light emitting surface directs to the direction of the surface of the printed circuit board and the window section which is arranged substantially along the surface of the printed circuit board, the center part of each emitted light beam dose not directly strike the window section. Furthermore, because the light mixing space is located comparatively far from the light emitting surface, the colors can be adequately mixed. That is, such effects cannot be achieved by the composition arrangement of AAPA without enlarging the device.

Ariga merely discloses the side emitting type LED 30 (column 6 and figure 3). Ariga dose not teach or suggest the arrangement of the light emitting surface, the light mixing space and a window section.

As such, even if the references are combined as suggested, the suggested combination fails to disclose all the features recited in claim 1.

Furthermore, Applicant also submits the Examiner has failed to establish a proper case of *prima facie* obviousness because the rationale to combine is not supported by any of the applied references. Rather, the Examiner improperly imports this rationale from the present specification. Indeed, Ariga actually supports maintaining the configuration of the AAPA in that this reference positions an LED to emit light directly at a target object (transparent window 22 of the AAPA and photodiode 35 in Ariga). Specifically, Ariga utilizes a side emitting type LED 30 to emit light toward a photodiode 35 in order to detect smoke in a fire detector. The Examiner's

contention that Ariga teaches emitting light along a printed circuit board is a mischaracterization of this reference. Rather, Ariga teaches of using a surface emitting LED 30 emit light directly toward a photodiode 35. The only reason Ariga emits light along the direction of a printed circuit board 10 is because the photodiode is positioned a distance away along the printed circuit board. (See FIG. 3). That light happens to be emitted along a printed circuit board is wholly irrelevant. In this way, one of ordinary skill in the art would recognize that the LED 30 is to be directed toward the photodiode 35 so that the detector can properly function to detect smoke. Further, Ariga expressly discloses that the reason for using a side emitting type LED 30 is to prevent the need to bend the lead terminals of a conventional LED so that the light may be directed toward the photodiode 35. (col 6, lines 15-31). Consequently, the Examiner's conclusion that Ariga's side emitting type LED 30 would lead one of ordinary skill in the art to modify the AAPA to emit light along a printed circuit board is wholly irrational.

Accordingly, Applicant submits the Examiner has failed to establish *prima facie* obviousness for at least this reason.

Because AAPA and Ariga dose not teach or suggest all of the features of the above new claims 1, Applicants submits that AAPA and Ariga dose not render the new claim 1 unpatentable. Further, claims 2-3 and 5-10 are allowable, at least by virtue of their dependency.

Therefore, Applicant submits claims 1-3 and 5-10 are allowable for at least this reason.

### **Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

AMENDMENT UNDER 37 C.F.R. § 1.111  
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Examiner feels may be resolved through personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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